

**OCCUPATIONAL SAFETY  
AND HEALTH STANDARDS BOARD**

2520 Venture Oaks Way, Suite 350

Sacramento, CA 95833

(916) 274-5721

FAX (916) 274-5743

Website address [www.dir.ca.gov/oshsb](http://www.dir.ca.gov/oshsb)**MINUTES FROM THE ADVISORY COMMITTEE MEETING****Proposed Amendments for the General Industry Safety Orders,  
Section 3563, regarding Rollover Protective Structures for Power Lawn/Turf Care Equipment.**

October 28-29, 2008  
Sacramento, California

The meeting was called to order by the Chair, George Hauptman, Senior Engineer, Occupational Safety and Health Standards Board (Board) at 9:00 a.m. on Tuesday, October 28, 2008. The Chair was assisted by Bernie Osburn, Standards Board Staff Services Analyst, and Chris Witte, Standards Board Executive Secretary. Michael Manieri, Standards Board Principal Safety Engineer, was also present. Larry McCune, Principal Engineer, and Mariano Kramer, Senior Engineer, attended the meeting on behalf of the Division of Occupational Safety and Health (Division).

The Chair reviewed the Board's policy and procedures concerning the goals, objectives and use of advisory committees. The Chair explained that the committee role is to advise the Board. The Board will then consider the committee recommendations usually accepting them, sometimes modifying them and less frequently rejecting the recommendations if for example, the committee's recommendations would not be at least as effective as the federal OSHA standards or would be considered as decreasing rather than increasing the level of safety afforded by the existing standards.

The Chair explained the regulatory requirements necessary to have a rulemaking approved by the Office of Administrative Law.

The Chair stated that the committee would discuss provisions in the General Industry Safety Orders (GISO) Section 3563, Power Lawn Mowers, regarding rollover protective structures (ROPS) for power lawn and turf care equipment. The Chair stated that this proposal was initiated by a petition filed by Julio and Madeline Petrini after their son, Michael, was fatally injured when the lawn mower he was riding went over a landscaping retaining wall and overturned on him. The Petrinis were present at the meeting, and the Chair extended condolences to them on behalf of the Board and the advisory committee members.

Mr. Petrini thanked the Board staff and the committee members for moving forward on their petition. He indicated that they hoped to prevent others from the grief of losing a family member to lawn mower accidents.

The Chair reviewed some of the accidents and injuries associated with riding lawn mowers. There were a number of these types of accidents found on the federal OSHA website, and most were very serious injuries and often fatalities related to workers being crushed by lawn mowers overturning on land or being drowned when mowers overturned in water, pinning the operator. The Bureau of Labor Statistics Information for 2007 indicated that nationally, there were 21 fatal accidents on riding lawn mowers, although there was no specific information regarding the causes of those accidents. In 2006, there were 290 non-fatal, reportable accidents involving riding lawn mowers.

The Chair indicated that he had asked Division staff to investigate whether detailed information was available for accidents in California and discovered that California, with the exception of the accident that prompted the petition, had had no fatal lawn-mower accidents since 1984. However, there may have been accidents or injuries that were not reported.

The Chair indicated that in an overall review of the accidents, the details included similar circumstances, including operating the mower on a slope that exceeded the manufacturer's specifications or operation on wet and slippery surfaces, encountering an obstruction such as a tree stump, a ditch, or a body of water. The water in some of the incidents was not very deep, less than two feet in some cases, but when the operator was pinned under the mower with no one to help, the operator drowned. In some of the cases, the mower was equipped with ROPS and/or seatbelts, but they were not in use. One of the members commented that many riding mowers were equipped with ROPS that could be folded down in order to access areas of low clearance.

The Chair stated that, after a demonstration of the speed of a zero-turn, high-powered riding lawn mower at a local dealership, he suspected that if the mower hit a big enough rock or other obstruction, it would not be difficult to overturn the mower even on a flat surface. He clarified that a zero-turn mower is one that can be turned in a full circle in a stationery spot because of the configuration of the wheels and the drive mechanism. In addition, the Chair indicated that many of the incidents discussed contained an element of inadequate training.

Mark Austrian, attorney, on behalf of the Outdoor Power Equipment Institute, indicated that the accident referenced in the petition involved a unit on which ROPS were required. The Chair clarified that the requirement for ROPS could be inferred if one read the broad definition of "industrial tractor" in GISO Article 25 agricultural related standards. A zero turn lawn mower with an engine over 20 horsepower, even though designed only for mowing lawns might meet the definition of an industrial tractor and thereby be subject to ROPS provisions for a tractor.

Mr. Austrian also stated that accident data can be extremely difficult to interpret, and he cited a 1996 incident in which the roll bar of a riding mower hit a broken tree, causing the tree trunk to fall onto the employee's head and neck, killing him. The Chair responded that, as was suggested to him, ROPS and seatbelts cannot be a panacea for all accidents, nor can they prevent all accidents.

Mr. Kramer, Division, emphasized that ROPS and seatbelts mitigate the damage when there is an accident. Mr. Austrian stated that in some units under a certain weight and/or horsepower, ROPS can make the unit unsafe.

Alice Carter of Valley Crest stated that, when ROPS became an available option, her company took that option, and she emphasized that it then came down to a matter of adequate training, including avoidance of overhanging tree and brush limbs, bodies of water, slippery areas, and steep slopes. She stated that adequate training in combination with ROPS and seatbelts can prevent many accidents.

John Gehlhausen, a plaintiff's attorney, familiar with lawn mower accidents, indicated that the Consumer Products Safety Commission (CPSC) is a good resource for accident information, as is the National Electronic Injury Surveillance System (NEISS). He stated that during the period between 1980 and 2003, CPSC had recorded 739 deaths in rollovers involving riding lawn mowers and garden tractors. He indicated that using extrapolation data, NEISS recorded 45,773 rollovers in the same 23-year period. According to NEISS statistics, there were approximately 7,300 people treated in emergency rooms for rollovers between 2004 and 2007. Thus, regardless of the amount of training, rollovers are going to occur, and he asserted that all of the riding mowers currently on the market are heavy enough to be fatal should they roll over on the operator.

The Chair asked Mr. Gehlhausen whether the statistics he referenced included residential accidents as well as occupational accidents. Mr. Gehlhausen responded affirmatively.

The Chair indicated that the accidents he had mentioned from California were reportable accidents, meaning that they had required hospitalization for more than 24 hours, had resulted in a serious injury that resulted in permanent disfigurement, or had been fatal. Mr. Kramer added that those incidents were those that would arise from an employment relationship.

Guy Prescott, Director of Safety for Operating Engineers Local 3, stated that training provisions should be included in the rulemaking proposal. ROPS, and particularly ROPS that can be folded down, without training is an extremely important element; training is no good without enforcement. It is the employer's responsibility not only to train but also to ensure that the employees are following their training out in the field. Mr. Prescott emphasized that the proposal would apply only to employment situations.

Drew Byers, Senior Manager of Corporate Product Integrity for Toro, stated that The Toro Company is aware of only two fatalities in California, one of which was the accident that spurred the petition and one that occurred while loading the mower onto a truck via a ramp.

The Chair stated that California Title 8 standards must be superior or equivalent to federal standards. Federal standards for power lawn mowers are found in 29 CFR 1910.243. The Chair stated the proposal also seeks to replace language in Title 8, Section 3563(b), which currently requires power lawn mowers to be "approved" after 1999, with specific references to the ANSI standards for power lawn mowers.

The Chair stated that before reviewing the proposal, the committee members should be familiar with what requirements are in the Title 8 GISO, the ANSI B71.1 and B71.4 standards for power lawn mowers, and federal standards. The current California standard requires compliance with ANSI B71.1- 1972, 1974, or 1980 standard for the period 1975 to 1999. After 1999, however, the California standard states simply that power mowers placed in service after April 15, 1999,

will be approved as defined in Section 3206 of the GISO. The Chair expressed concern that the existing standard does not provide as much guidance and information about the safety features and design of mowers as that contained in the ANSI standards for lawn mowers.

The federal standard for power lawn mowers is very prescriptive in referring to the general guarding requirements (29 CFR 1910.212), and it also addresses issues of guarding, walk-behind rotary mowers, and riding rotary mowers. The Chair indicated that he wanted to ensure that referencing the ANSI standards in the proposal would be equivalent or superior to the requirements in the federal OSHA power lawn mower standard.

Bill Cameron, Standards and Compliance Manager for John Deere, stated that the ANSI standards would cover all of the requirements in the federal standard, but the information in the federal standard is old and some of the language does not match up with that of the current ANSI B71 standards.

Jim Fear of Toro and Brian Crockett of John Deere are the chairmen of the ANSI B71.1 and B71.4 standard committees respectively that are currently developing amendments to standards regarding riding lawn mowers. Mr. Fear stated that some of the language in the federal standard dates back to the 1960s and 1970s, and it has not been updated since.

Mr. Crockett indicated that the ANSI B71.4 standard would meet the requirements in the federal OSHA lawn mower standards. Mr. Fear added that both the B71.1 and the B71.4 standards would meet or exceed the provisions addressed in the federal standard, although the updated ANSI standards are more consistent with current equipment design and industry language than the federal standard. Mr. Cameron added that there were items in the federal standard that might well be obsolete.

The Chair asked whether the ANSI standards were directed primarily at manufacturers or end users, referring to the fact that ANSI has standards for “consumer” equipment and “commercial” equipment. He expressed his opinion that it appeared that the ANSI standards were primarily addressed to the manufacturers. Mr. Cameron responded that ANSI standards are intended for use by manufacturers in the design and manufacture of the equipment, rather than for consumers or employers. However, the ANSI standards do indicate what information should be included in the operator’s safety manual.

The Chair indicated that the Board has expressed concerns regarding the inclusion of ANSI standards by reference, citing the cost and difficulty for the employer to obtain copies of those standards. The Board has questioned whether there is a necessity to include those standards by reference or whether the equipment can carry a label indicating compliance with applicable ANSI standards. He indicated that those issues would be discussed and evaluated.

The Chair reviewed the portions of the ANSI B71.1 standard for consumer products regarding lateral upset testing for equipment weighing more than 1,245 lbs. and the B71.4 testing requirements for commercial equipment weighing more than 1,436 lbs. According to the standards, when the equipment weighs less than those amounts, the operator’s protective device is not required. One of the members pointed out that when considering the mass/weight for the B71.4 testing requirement, the weight of the operator is included in the 1,436 lb. weight

requirement. However, when performing the test, there is no operator. Thus, the lateral upset tests for recommending ROPS in both the B71.1 and the B71.4 standards are essentially the same.

The Chair stated that the ANSI B71.4 standard recommends ROPS for the unit if the mass exceeds 1,436 lbs. and the tip angle is less than 40 degrees. He asked whether the lateral upset testing requirement is the same for consumer (residential) products, and commercial products. One of the members responded affirmatively. The Chair then asked if the standard recommends ROPS for a unit, can it still be purchased without ROPS. Mr. Fear clarified that the recommendation is aimed at the manufacturer, so by the time the distributor receives it, the manufacturer has already determined based on their evaluation of the equipment whether the equipment will be offered with ROPS as standard, as option, or not at all.

Mr. Crockett added that the standard encompasses a broader category of equipment than just lawn mowers such as golf course bunker (sand trap) rakes and attachments. Mr. Crockett stated that the manufacturer has to take into account the specific application of the equipment being tested and make a determination whether adding ROPS would create other hazards or safety concerns.

The Chair asked when a riding lawn mower would be sold with an option to purchase ROPS as opposed to having the ROPS standard equipped. Mr. Cameron responded that ANSI B71.4 is a voluntary standard, and the ROPS provisions are recommendations. If the manufacturer decides to meet the standard, when the equipment is within the recommended range, the manufacturer determines whether to include ROPS as standard or as an option. In addition, the standard outlines when ROPS are not required or recommended. If the machine is below the trigger weight for ROPS testing, that does not mean that the manufacturer cannot install ROPS; the ANSI standard merely determines a minimum level, and it is a voluntary standard.

Tim Cromley, Marketing and Sales Manager for Walker Manufacturing Company, stated that Walker's position is that, since their mowers' front-load design lends itself to a lower center of gravity, and their equipment has been meeting the ANSI stability testing standard consistently, they do not require ROPS.

Mark Austrian indicated that the weight and type of equipment are important considerations when determining which standards to employ.

Mr. Gehlhausen stated that the tests required by ANSI standards are static stability tests; they are not intended for when the unit is in motion. He stated that when ROPS are sold as an option, it sends a subtle message to the consumer that the machine is safe as is without the ROPS, which may not be the case.

Mr. Kramer asked for the manufacturers' input as to how the mower weights that trigger stability tests for the ANSI standards are determined.

Mr. Crockett stated that when developing the testing requirements, the B71 committee reviewed all of the available accident data and all of the national and international standards, not only in the lawn mower and turf care equipment industry but also in other industries such as agriculture

and construction. The result of that research is reflected in the standards. ANSI requires the committee to review the standard every five years, and the committee is currently doing so.

Mr. Crockett noted that as the committee reviews the ANSI standard, it also reviews and evaluates the market. This is a continuing process as new technologies are introduced, new needs and labor challenges are discovered, and new devices are introduced. The concern with ROPS is that at some point, they can have a negative effect on the machine, particularly as the machines get smaller and smaller. The ROPS raise the center of gravity and lowers the tip angle, and on smaller machines may actually present more of a danger than they prevent. Because the ANSI standard is voluntary, manufacturers can decide to meet it or not, and they also can decide to build in more safety than the ANSI standard recommends.

The Chair asked whether there was more of a danger of getting caught in the ROPS on a smaller machine because the operator's shoulders and head are closer to the top of the structure than in a larger piece of equipment. Mr. Crockett responded that as the machines, and consequently the ROPS, get smaller, it is more difficult for the operator to stay within the ROPS. If a larger tractor or mower tips over, the operator is further away from the wheels than on a smaller machine. The wide scope of equipment that is evolving, the weight figures, stability angles, and many other aspects must be taken into consideration. That is why the committee debates the question extensively and obtains as much data as possible before updating the ANSI standard.

Dan Leacox, of Greenberg Traurig asked whether there is any data demonstrating that it is easier to escape from a smaller machine in the event of an upset. Mr. Crockett responded that that is a common position in the industry, but it is difficult to test. Mr. Austrian stated without ROPS it is preferred that the operator to be able to get off of the machine in the case of a tip-over.

The Chair asked whether the lever-type controls typical for some zero turn mowers that are positioned across the legs would prevent the operator from being able to escape or exit off of the machine not equipped with ROPS. Mr. Crockett responded that the B71 committee has been discussing that issue in its review of the ANSI standard, and part of that analysis is an examination of data to determine whether those machines could employ an alternative lever system. He also stated that the committee also needs to examine whether a different lever style will expose the operator to other hazards that the current machine controls are intended to prevent.

Mr. Kramer asked whether the industry had collected data to demonstrate that the weight of the machine in relation to roll-over accidents is a factor in those accidents. Mr. Austrian responded that each individual company looks at its accident records and makes a judgment based on those records.

Mr. Cameron stated that, as mentioned earlier, the ANSI B71.4 committee is currently in the process of re-evaluating the 2004 standard and looking for any changes that may be necessary due to changes in the market. Mr. Gehlhausen asked if the committee was reviewing data in relation to the type of vehicles that have roll-overs. Mr. Cameron responded affirmatively, and stated that the committee pulls the accident data as a part of their re-evaluation of the standard. He also stated that the zero-turn machines have gained prominence in the market in the last ten to fifteen years and are becoming more prevalent.

Mr. Cameron went on to state that the ANSI committee and the manufacturers review the accident data for those machines and determine whether there is something that they should be doing to make the machines safer. There are sections in the standard about controls, weight issues, and other matters, each of which is reviewed by the committee.

Mr. Gehlhausen asked whether there is a possibility that the ANSI committee will consider lowering the weight limit on the machines after its review. Mr. Cameron responded that before the committee made a final decision, it would want to be sure that there is data to substantiate the change, because if the committee makes a change that does not have supporting data, there is a strong likelihood that there will be problems after the standard is adopted.

Mr. Petrini expressed difficulty in believing that a safety feature on a mower would be the ability to jump off in the case of a roll-over. He stated that accidents happen very quickly and not many people have the agility to escape from the machine as it is rolling over.

Mr. Gehlhausen discussed at length the industry's reluctance to install ROPS on smaller mowers. Mr. Austrian stated that the industry representatives were present at the advisory committee to work with the Board staff and stakeholders to craft a proposal that would be acceptable for all.

The Chair asked for comments from end users of the equipment, and received comments from Alice Carter of Valley Crest, Jonas Ekeroth of California Department of Parks and Recreation (DPR), and Len Nelson of CalTrans.

Ms. Carter stated that Valley Crest has 10,000 employees nationally and they use a variety of mowing equipment. She stated the company had a fatality last summer in which the operator, on a machine that had ROPS, was mowing on a slope near a water feature on a golf course. The operator was a five-year employee who had been properly trained, but he was not wearing his seatbelt. He got too close to the water's edge, and the mower flipped over, pinning the operator underneath. He was mowing alone, so by the time he was noticed missing, it was too late. All of the evidence in that incident pointed to the fact that if the operator had been wearing his seatbelt, he would have survived the accident.

Because of that incident, Valley Crest initiated a policy that if an operator were caught not wearing a seatbelt and ROPS were not in operation, the operator is suspended without pay. Valley Crest also initiated a ROPS policy in which they follow the manufacturers' recommendations. If ROPS were an available option, all of the equipment was retrofitted with ROPS. Toro performed all of the retrofits free of charge; Scag charged approximately \$180 per unit. That retrofitting was to be completed by the end of October. Valley Crest is phasing out any equipment that does not have ROPS as standard equipment or as an option. Ms. Carter stated that training in how and when to use ROPS and reinforcement of the training plays a large part in the safe operation of the equipment as well.

Jonas Ekeroth, stated that DPR has approximately 60 to 80 ride-on mowers, and roughly half of those already have ROPS and seatbelts. From his point of view managing the safety program, it is easier for the end user if there is a consistent requirement for ROPS and seatbelts, regardless of the weight of the equipment.

Mr. Austrian asked Mr. Ekeroth about the weights of the machines used by DPR. Mr. Ekeroth responded that they ranged from small machines, such as the John Deere 345, up to machines that weigh within the ANSI guidelines for stability testing of 1,245 to 1,436 lbs. Mr. Ekeroth also stated that it would be confusing if the standards differentiate between commercial and consumer equipment. It makes more sense to have the same requirements for all of the machines. He also emphasized the need for training so an employee can determine whether a slope is too steep for a ride-on mower or other and to help identify other hazards.

Len Nelson, a Maintenance Safety Manager for CalTrans, stated that CalTrans has a large fleet of agricultural type tractors, but they are larger - 72 horsepower and above and equipped with ROPS. He noted that statewide, CalTrans has only three or four small garden tractor type turf mowers, and he was unsure whether or not those mowers had ROPS. He stated that ROPS are installed whenever they are required on tractors (e.g. subject to Article 25 provisions).

Jim Green of the Alamo Group emphasized the need for proper training and instruction in the use of the equipment. He suggested that training should be a part of the proposal, and that training should include not only reading the manual or other training material, but also should consist of hands-on training with proper supervision as well.

Mr. Ekeroth stated that DPR employees are not allowed to use any equipment until they have been trained on that equipment. He also stated that the operating instructions are good tools to use in training, and in many instances, DPR relies on the owner's manual to determine when it is safe to operate the equipment.

The Chair asked for comments regarding the merits of addressing requirements for the use of ROPS and ideas for the scope of such a proposal.

Cathy Pipis, the Chief Financial Officer for Carson Landscape Companies, asked what the scope of the proposal would be, specifically in regard to the size of the employer. The Chair responded that the proposal would apply to any employer-employee relationship in which lawn care equipment was being used. There would be no exclusions based on the number of employees.

Mr. Cameron also emphasized the need for training including training addressing which type of equipment is most appropriate for a particular type of operation.

Jim Gillmore, an attorney with Hustler Turf, stated that an exception from a ROPS requirement would be necessary, such as when working around low-hanging branches. The committee concurred and that this would be addressed in reviewing the actual proposal.

With respect to referencing the ANSI standards in the proposal, Mr. Prescott felt that the federal regulations would be adequately addressed as the ANSI standards cover elements other than ROPS such as guarding, operational controls, braking and other lawn mower safety features. In addition, he indicated that it would be difficult for a California standard to mandate the manufacture of equipment that is used nationwide. He suggested that the proposal include language indicating that if ROPS and seatbelts are available from the manufacturer, they shall be installed and used; if a manufacturer felt that it would be unsafe to install ROPS on a particular



piece of equipment, however, it would not be required. The Chair responded that that had been his intention when crafting subsection (c) of the proposal.

There was discussion regarding the feasibility of ROPS on smaller, lighter mowers. Mr. Gehlhausen noted a number of manufacturers that had installed ROPS systems on certain models of riding mowers that weighed less than the trigger weights for testing in the ANSI standards. In summary, Mr. Austrian commented that each manufacturer upon evaluation by their engineers, regarding the design and intended use of equipment must make a determination as to the safety and necessity for ROPS on a particular machine.

The Chair stated that he was aware of industry concerns that not all machines should be equipped with ROPS systems and had attempted language for the proposal where a consensus could be reached regarding ROPS, training provisions and possibly some restrictions on the use of riding mowers in high hazard areas.

Mr. McCune stated that the Division had worked closely with manufacturers when retrofitting construction and agricultural equipment with ROPS and in the case of equipment that could not safely be retrofitted, guidelines regarding appropriate terrain for that equipment were established. Upon questioning from the Chair, Mr. McCune stated that a hazard exposure evaluation was performed, and if equipment manufactured prior to an established date could not safely be retrofitted, then the terrain guidelines were applicable.

Mr. Len Nelson, Cal Trans, expressed his opinion that it would be difficult to enforce terrain guidelines such as use of the equipment on various sloped terrain. Mr. Prescott concurred with Mr. McCune about the necessity of including hazard assessments for various types of equipment in both the standard and in any training provisions. Mr. Green also stated that it would be useful for supervisors or foremen to remind employees of terrain restrictions or guidelines daily during morning “tailgate” meetings.

Mr. Gehlhausen stated that in the case of state agencies, in which one agency borrowed another’s equipment for a specific purpose, the terrain guidelines for that piece of equipment would need to be made clear to the borrowing agency. In addition, regular, periodic inspections of the equipment would be useful to ensure that it is in good operating condition. He further stated that perhaps guidelines for driving the equipment up a ramp (such as into a truck for transport to a repair shop) should also be established.

Mr. Nelson stated that GISO Section 3203 adequately covers training, documentation, and instruction guidelines. He stated, as an employer, that further requirements limiting the operation of certain equipment based on the terrain would be difficult to implement and enforce.

The Chair stated that, based on the discussions and accident descriptions, there was room to consider general training requirements in the proposal. He emphasized the importance of addressing the associated hazards in a manner that will reduce and mitigate the type and number of injuries that are occurring. He stated that one of the objectives of the advisory committee would be to develop a proposal that would address high hazard exposures.

Mr. Petrini asked whether it would be too simple to require all manufacturers to install ROPS and seatbelts. He stated that if all equipment were required to have ROPS and seatbelts, it would level the playing field.

Mike Placencia, Operating Engineers, Local 501, stated that although it may be difficult to mandate design requirements for manufacturers who deal on a national level, California would not be prohibited from doing so. He stated that California is often on the leading edge of safety regulations in the United States. He emphasized that the primary responsibility of an employer is to protect worker health and safety, and the proposal would be one more way of fulfilling that duty. The Chair indicated that the committee proposal [subsection (d)] was intended to require ROPS and seatbelts for all new sit-down riding machines. However, he noted that the discussions thus far from industry indicated that manufactures have safety and stability concerns for certain machines including lighter weight/smaller mowers.

Mr. Austrian added that the industry believes that a mandate for ROPS on all products is problematic, not only below certain weights, but based on the design and stability of certain models it could be more dangerous to install ROPS.

Mr. Kramer asked whether there were after-market manufacturers of ROPS and how such equipment would be addressed in the proposal. Mr. Cameron stated that John Deere discourages the installation of after-market equipment from other manufacturers although he noted that there are companies that install after-market equipment.

The Chair stated that in subsection (c) of the committee's proposal, the requirement for ROPS for existing equipment would be triggered by the equipment manufacturer's design for such equipment. Note that the post committee proposal would also require ROPS that are engineered and approved for the mower.

The Chair asked if there was a consensus that if existing equipment were installed with, or designed to accept ROPS by the manufacturer, a ROPS system would be required. The consensus was to include such a requirement in the proposal.

With reference to training requirements, Mr. Prescott stated that he would prefer to see all of the training requirements, including employee instructions together in one section. The Chair agreed and indicated that matter could be addressed when the committee discussed training requirements.

The Chair indicated that subsection (c) regarding ROPS and seatbelts for existing equipment would mitigate hazards for equipment currently in use. However, the committee needed to further discuss and reach consensus regarding subsection (d) that addressed equipment manufactured in the future.

Ms. Carter asked how equipment that genuinely is not designed for ROPS, such as Walker Manufacturing mowers, would be dealt with in the proposal. The Chair responded that under the provisions of the proposal for existing equipment, ROPS would not be required if the equipment was not originally designed for ROPS, either as an option or as standard equipment. The committee was still reviewing provisions for future equipment.

Mr. Placencia asked whether the Walker mower was able to climb slopes or perform functions in which it could possibly roll over. Mr. Cromley, Walker Manufacturing, responded that egress in the Walker mowers is a viable choice, as they are designed with a lower center of gravity and steering controls that allow for the operator to exit/jump off the machine in the case of a roll over.

The Chair stated that it appeared the committee was in agreement with the portion of the proposal dealing with ROPS for existing equipment, although the language may need to be fine-tuned. He then opened the discussion to methods of addressing future equipment [subsection (d) in the committee's draft proposal].

Mr. Gillmore stated that thus far, he had heard three possibilities for the proposal. The first would be a mandate that all riding mowers have ROPS. The second was to establish criteria for when ROPS would be required, which may be difficult to enforce. The third possibility was to establish a minimum weight per unit which would require ROPS, which the ANSI committee has been grappling with for some time. He suggested that the only viable, enforceable alternative, from his point of view, is to wait until the ANSI committee notices a proposed standard with stronger language toward the end of 2009.

The Chair responded that waiting for the ANSI standard may not achieve the intended results, as often the language is worded as recommendations rather than requirements. Another alternative would be to have subsection (c) for existing equipment also apply to all new equipment, stating that if the manufacturer designs the equipment for use with ROPS, then ROPS shall be required and used. The Chair asked for comments from the labor representatives about such a proposal that would include training requirements.

Mr. Prescott stated that the suggestion was a good compromise and a step in the right direction. He suggested including language that if the equipment does not have ROPS available, then terrain limitations be established along with training requirements.

The Chair suggested that terrain or hazard limitations could include staying a specified distance from culverts, bodies of water, retaining walls, drop-offs, and similar hazards.

Mr. McCune stated that the terrain requirements could be listed as exceptions to the ROPS requirement, which would be applicable to the equipment that was not designed for ROPS or could not be retrofitted by the manufacturer.

The Chair noted that certain terrain or exposures are a hazard to the operators of riding mowers with or without ROPS and suggested operational limitations based on hazard exposures apply to all sit-down, ride-on lawn mowers, including those with ROPS. He asked for the manufacturers' input on that suggestion.

Mr. Austrian expressed that manufacturers would need to evaluate the benefits of certain terrain limitations in the proposal but he noted that training would be an essential component of the proposal. The Chair responded that, judging by the type of accidents that have occurred that provisions for certain limitations in the operation of riding mowers near known hazards had

merit for consideration. Ms. Pipis, Mr. Cameron, and Mr. Ekeroth expressed agreement with Mr. Prescott's suggestion regarding the inclusion of training and terrain limitations in the proposal.

Mr. Green expressed agreement with the inclusion of training requirements. He also suggested a certification program or a mandated training program, similar to the federal training program for teen-aged agricultural workers. He went on to state that workers must then be held accountable for their actions.

Bruce Wick of the California Association of Specialty Contractors, stated that part-time employees could be at risk without specific training requirements in the proposal, as they do not always receive the same training as full-time employees. He mentioned that including training requirements only in reference to ANSI standards may not be effective because small employers do not have easy access to the ANSI standards.

The Chair stated that the committee had reached a consensus to use language consistent with subsection (c) for existing mowers that would be applicable to newly manufactured equipment. The proposal then for all riding mowers would require installation and use of ROPS and seatbelts for all mowers designed for such by the manufacturer. He stated there would be some cost impact to employers to equip existing riding mowers designed for ROPS by the manufacturer that currently were not equipped with them. The Chair noted for the record Mr. Gehlhausen's position that the proposal could go much further and require ROPS and seatbelts on most if not all newly manufactured riding power lawn mowers.

The Chair also stated that there had been a majority consensus for training requirements and the development of terrain/hazard restrictions for riding mowers in the proposal. He suggested that those requirements be addressed the next day and possibly would need a separate subcommittee in the event of time limitations.

The Chair adjourned the meeting for the day, asking the committee members to return at 8:30 a.m. on October 29, 2008.

#### Day 2, October 29, 2008

The Chair called the second day of the meeting to order at 8:30 a.m. on October 29, 2008, and he reviewed the discussions from the previous day.

Mr. Gehlhausen discussed that he felt that many or all ride on mowers could be equipped with ROPS systems and he provided numerous examples from a binder where various manufacturers had opted to install ROPS on certain mowers that weighed less than the 1245 pound weight that triggers stability testing for ROPS in the ANSI B71.1 power lawn mower consensus standard. The Chair indicated that we were revisiting some of the discussion from yesterday regarding ROPS on lighter weight and smaller machines but that it was his understanding that the manufacturers were not saying that it is impossible to install ROPS on certain lighter machines,

but rather, each manufacturer must make an engineering determination as to the necessity and safety ramifications of doing such. Mr. Austrian reiterated that each manufacturer evaluates the design, weight and stability of a machine and makes a determination if ROPS will improve the safety of the machine.

The Chair then opened the discussion to a line-by-line review of the proposal, beginning with the proposed Section 3563 title, "Power Turf Care Equipment." He stated that the reason for that change, in part, is that the national consensus standards use that term.

Mr. Austrian stated that "turf care equipment" is a broader term than defined in proposed text. He expressed concern that the definition in the proposal would then limit the term "turf care equipment" to lawn mowers. In addition, the general description uses the term "power mowers," which may be a better term for determining the scope of this proposal.

The Chair clarified that Mr. Austrian's suggestion was not to change the title but leave it as "Power Lawn Mowers," and include the definitions of consumer and commercial equipment.

Mr. Placencia questioned scope of the proposal, asking whether it would be limited to ride-on mowers. The Chair responded that Section 3563 applies to all power lawn mowers, so the scope would need to remain somewhat broad. Ride-on, sit-down type mowers would be addressed within the standard.

Ms. Carter and Ms. Pipis agreed with Mr. Austrian, as turf care equipment encompasses more than just mowers. Consequently, the committee consensus opinion was to keep the title "Power Lawn Mowers" and to use that term throughout the proposal instead of "turf care equipment."

Mr. Wick asked whether language should be included to address the situation when an agricultural tractor may be towing a lawn mowing attachment. Mr. McCune stated that in such an arrangement, a mowing attachment could be covered under Section 3563 for power mowers but the provisions for ROPS on the agricultural tractor would be covered in GISO Article 25 related to agricultural type operations. Mr. Prescott stated that his interpretation of the scope section was that if, for instance, he were using a 30 horsepower zero turn mower, it would be a mower covered under the proposal. However, if he were using a 30 horsepower tractor with an attachment that is mowing, the tractor still remains under Article 25 agricultural related regulations, while the mowing attachment would be subject to the applicable ANSI B71 standard guarding requirements referenced in the proposal.

In light of the above comments the Chair indicated that the scope of Section 3563, subsection (a) should be reviewed by the committee. The Chair stated that existing subsection (a) limits the scope of the section to mowers/tractors that are 20 horsepower or less including the informational "Note" which in summary states that tractors of more than 20 brake engine horsepower are referred to the provisions in Article 25 (which include provisions for agricultural and industrial type tractors).

It was discussed that the provisions in Section 3563 go back to at least 1978 and many years ago 20 engine horsepower likely was an accurate way to determine a machine intended for mowing versus agricultural operations. However, several representatives discussed that many zero turn

lawn mowers and lawn riding tractors designed primarily for mowing are well over 20 engine horsepower and often can range up to 30 engine horsepower.

In the prior day's discussion, Mr. McCune had also asked manufacturers whether the weight limit for ROPS testing in the ANSI standard had any relation to the horsepower of the machine. Mr. Cameron responded that the reference to "20 horsepower," is an obsolete reference because in recent years, smaller machines can have more horsepower. He stated that none of the ANSI standards list horsepower criteria for safety anymore.

The committee discussed at length various ideas for the language in the scope section and ultimately agreed to delete the reference to 20 horsepower as an outdated indicator of what machines should be covered in Section 3563. The committee also discussed the need for revision and/or elimination of the "note" in the scope section and Board staff has developed proposed language for committee review. Note that in order to fall within the scope of Section 3563, the proposal would require that tractors and attachments must be designed primarily for mowing operations and manufactured in conformance with the ANSI B71.1 and B71.4 standards related to power lawn mowers.

Mr. Austrian asked whether lawn tractors above 20 horsepower would be required to have ROPS. Mr. Prescott stated that it is his understanding that if the unit is a tractor that can have multiple attachments, it would be covered by Article 25 as an industrial tractor, which would require ROPS. However, if it is a tractor designed specifically for mowing lawns, meaning that it has a fixed, permanent under-belly mower, then it would be covered under Section 3563. In post committee comment, note that the attached proposal for subsection (a) would in addition require that the tractor be manufactured in conformance with the applicable ANSI B71 standard for power lawn mowers to fall within the scope of Section 3563. Otherwise ROPS requirements provided in Article 25 for agricultural or industrial tractor operations would apply to the tractor.

The committee then discussed proposed subsection (b), Definitions. The proposal initially attempted to define commercial and consumer (residential) turf care equipment, as defined in the ANSI B71 standards. However, the committee felt that these definitions would be confusing to the regulated public, and the consensus was to eliminate the "Definitions" section in favor of adding the full titles of the ANSI B71 standards in the new subsection (b) related to "General" requirements. The committee discussed at length a number of ways to reference the ANSI B71 standards in the proposal which was consuming excessive time.

In order to move on, the Chair indicated he would propose an effective manner in which to list the standards [see proposed subsections (b)(1) & (2)]. There was discussion that the ANSI B71 standards are primarily directed toward design, controls and testing requirements for manufacturers. Guy Prescott, Operating Engineers, indicated it is difficult for the small employer to obtain the ANSI standards and preferred to avoid the need for all employers to have to obtain the standards in order to determine how to comply.

The Chair then addressed the labeling requirements in proposed subsection (b) and asked if labeling mowers as meeting the applicable ANSI B71 standards for existing equipment was practicable. The Chair stated that a label on the mower affirming that the equipment meets the applicable ANSI B71.1 or .4 standards would facilitate compliance and be a clear indication to

enforcement personnel that the equipment meets applicable power lawn mower standards. After general discussion, the Division, manufacturers and landscape companies such as Carson and Valley Crest, determined that putting ANSI B71 compliant labels on all of their existing equipment would be very onerous and difficult to achieve. Manufacturers further added that if they issued labels for existing equipment there would be little or no control over how the labels were installed and on what mowers they would be affixed to by end users.

However, there was a consensus decision to add a new subsection (b)(3) requiring labeling to indicate compliance with the applicable ANSI B71.1 or .4 standard for mowers placed in service after the effective date of the proposed standard, a date that would be filled in by the Office of Administrative Law (OAL).

Therefore, the proposal would require that all new mowers manufactured after the effective date of the proposal to be labeled as meeting the applicable ANSI B71.1 or B71.4 standard. Manufacturer representatives affirmed that existing mowers already should have a manufacturer's label indicating the name and address of the manufacturer or supplier, model number or serial number. Therefore, an inquiry to the supplier, distributor or the manufacturer can readily affirm which ANSI B71 standard is applicable to a specific mower for existing equipment.

The Chair directed the discussion to subsection (c), Rollover Protective Structures (ROPS) and Seat Belts. He stated that based on the discussion the previous day, the consensus decision was that subsection (c) would cover the requirements for ROPS on existing and new mowers in combination with other proposal provisions such as establishing a safe zone or distance from drop offs/retaining walls and certain water hazards. The proposal would also include operator training requirements. In review, the consensus was to require ROPS on machines that had been designed for ROPS either as an option or as standard equipment by the manufacturer, and to include a seatbelt requirement for riding power lawn mowers with ROPS.

The committee discussed the need for a phase-in date effective date related to the provisions in subsection (c) for ROPS. This would allow manufacturers, suppliers and the landscape companies and other entities to have sufficient time meet the provisions for ROPS and seatbelts. The committee reached a consensus that 180 calendar days from the effective date of the proposal would allow stakeholders including employers, suppliers and manufacturers sufficient time to arrange for compliance with subsection (c).

The committee also discussed the cost of equipping existing riding mowers with ROPS as required by the proposal. Some of the manufacturers such as the Toro Company offer to provide the ROPS equipment and install it at no cost provided the work is done by authorized distributors or dealers. The cost of installing ROPS varies according to the manufacturer of the mower. It was apparent that most manufacturers have a nominal charge in the range approximately 200 dollars per mower for the ROPS related installation. In addition, there was discussion regarding the use of seatbelts with mowers equipped with ROPS that can be folded down in low clearance areas, and the consensus was to include an exception, that the use of ROPS and seatbelts may be temporarily suspended when operating in areas where the vertical clearance is insufficient for the use of ROPS [see the exception for subsection (c)].

The committee discussed the concern that currently there is no national consensus standard specific to the design requirements for ROPS on lawn mowers. Industry representatives indicated that agricultural equipment ROPS provisions are frequently used to design ROPS for mowers. In the absence of nationally recognized lawn mower consensus standards addressing ROPS for mowers the committee discussed that “approved” ROPS may not be necessary since it is in the manufacturers best interest to develop ROPS systems with sufficient structural integrity. However, upon further staff review, note that proposed subsection (c) provides that ROPS be engineered and approved for the mower. Essentially this means that the ROPS must be designed in conformance with the criteria in GISO Section 3206.

Mr. Prescott suggested following the powered industrial truck training provisions in GISO Section 3668 as a model for the power lawn mower training requirements. The committee agreed and there was a great deal of discussion regarding required training elements and how those elements would be determined. The Chair indicated that a subcommittee, to be convened at a later date, would be needed to address training requirements for the proposal. The subcommittee would also consider provisions related to the use of riding mowers in high hazard areas or situations. Proposed language developed with the assistance of the subcommittee would be shared with the entire committee.

The Chair summarized the proposed amendments developed with the assistance of the advisory committee and reviewed the Board’s rulemaking process. The Chair stated that minutes of the meeting and a draft proposal would be prepared and sent to the committee members. The Chair indicated he would need additional assistance from manufacturers and stakeholders regarding costs for compliance with the proposal. Rulemaking documents would then be prepared and noticed for public comment and the amendments would be calendared for the Board’s consideration at a future public hearing.

The Chair thanked all the committee members for their attendance, participation and comments. There being no further questions or comments, the October 29, 2008, meeting adjourned at 4:30 p.m.



Subcommittee Meeting – December 16, 2008,  
Sacramento, California

The subcommittee meeting consisted of the following attendees:

Alice Carter, Regional Safety Manager, Valley Crest Landscape Company  
Kathy Pipis, CFO, Carson Landscape Industries  
Mariano Kramer, Senior Engineer-Division  
Larry McCune, Principal Engineer-Division  
Guy Prescott, Director of Safety, Operating Engineers, Local 3  
George Swift, Director, State Bargaining Unit 12, International Union, Operating Engineers  
Bruce Wick, Director of Risk Management, Calif. Professional Assoc. of Specialty Contractors  
Carol Kelly, Senior Specialist, Product Integrity, The Toro Company  
Jim Green, National Safety Training Manager, The Alamo Group

The subcommittee meeting was chaired by George Hauptman, Senior Engineer, Standards Board and Bernie Osburn, Standards Board Staff Services Analyst assisted with the meeting. The Chair stated that this meeting would focus on several issues in greater detail than was afforded in the advisory committee meetings related to power lawn mowers that were convened on October 28-29, 2008. The meeting would focus on operator training requirements for power lawn mowers and also consider provisions that would limit the use of ride-on, sit down mowers in certain high hazard areas that have been known to cause serious or fatal accidents. The committee would also consider an exception from the Section 3563(c) ROPS requirements where the vertical clearance is insufficient to accommodate ROPS (e.g. low tree and brush branches and possibly during unloading and unloading operations with clearance issues).

The committee briefly discussed methods to assist the chair in determining costs associated with the overall proposal including any costs associated with restricted use of mowers in hazardous areas. An initial discussion ensued that operators should already be following recommendations in the operator's manual for avoiding common hazardous areas such as steep slopes, obstacles, drop-offs, ditches etc.

The Chair directed the committee to Section 3563(c) to review draft language for an exception that would permit temporarily disengaging ROPS where the vertical clearance is insufficient. Bruce Wick suggested that the exception apply also to the use of seatbelts since it is generally accepted that the use of seatbelts without ROPS deployed is not recommended. The committee agreed with this suggestion and the exception language shown in proposed subsection (c).

The Chair noted that the language in the body of subsection (c) triggers the ROPS requirement when visual inspection or technical information from the manufacturer indicates that a mower is designed for ROPS. In most cases a visual look at the machine confirms ROPS are installed, or have brackets or a hold pattern for ROPS. The committee discussed if necessary, a call to the supplier, distributor or manufacturer with the make, model and/or serial number of the machine could also readily identify if a mower is designed to accept ROPS. Further, it was mentioned

that information in the owner's manual or manufacturer's product accessory information would be a source of information.

The committee then reviewed subsection (d), "Prohibited use of ride-on, sit-down lawn mowers." The Chair indicated in drafting this language, he used a number of sources including accident histories, operator manuals, and training literature made available via committee contacts. The Chair explained that subsection (d)(1) requires that operation on slopes not exceed the manufacturer's recommendations. Subsection (d)(2) provides a limitation of no greater than 15 degrees for operation on slopes (which is typical for manufacturer's recommendations) in the unlikely event that the manufacturer does not address operation on slopes or the information is not obtainable. The committee agreed to this language and then reviewed subsection (d)(3) that would limit operation of riding mowers within 5 feet of the hazard areas listed in this subsection.

The Chair indicated that the distance of 5 feet in subsection (d)(3) is intended to prevent situations where a mower is too close to a body of water or the wheel of a mower drops over an edge, levee, ditch, or retaining wall etc. The committee also discussed that some accident summaries show that an operator may have lost control or/or slid down a steep slope a significant distance and eventually did go over a drop off or land in a body of water. The committee also discussed that those situations would be covered by subsections (d)(1) and (2) addressing operation on slopes as well as training requirements further in the proposal that include review of the operator's manual.

Kathy Pipis stated that she had met with mower operators and managers at Carson Landscape, and they felt that the 5 foot distance was practicable in that it keeps the mower far enough away from upset hazards and would allow a 36 inch or 48 inch deck walk-behind mower to perform the job and if necessary, follow up with a 21 inch deck walk-behind mower. After discussion, the committee agreed to retain the 5 foot minimum clearance prescribed in subsection (d)(3). Further, the committee agreed to the provisions in subsection (d)(3)(A) and (B) which limits operation of riding mowers in certain hazardous areas.

Mariano Kramer asked if there should be a requirement to inspect and walk the area prior to mowing. The Chair indicated that there is a training content provision related to this in subsection (e)(3). Jim Green felt a mandate that the operator walk areas to be mowed was not practicable in all cases and not recommended. Other members agreed noting that could mean walking several miles in some cases.

The committee began review of subsection (e) titled "Powered Lawn Mower Operator Training." The Chair indicated that some of the draft provisions are modeled in part after similar training standards in Section 3668 for industrial trucks. The Chair also reminded the committee that the training requirements were applicable to walk-behind mowers as well as riding mowers. The committee discussed and agreed to the provisions in subsection (e)(1) through (e)(2) noting that the language in subsection (e)(2)(C) would include demonstrations by the trainer and that practical exercises would be performed by the trainee.

The committee then discussed and agreed to the draft provisions of subsection (e)(3) which outline training topics. The committee discussed whether a daily checklist should be required for various equipment. However, the committee felt this would be covered by recommendations

in the operator's manual and/or by the general provisions in Section 3203 regarding the Injury and Illness Prevention Program. The committee then reviewed the proposed revisions in subsection (e)(4) for refresher training. Jim Green suggested that annual refresher training be a requirement. Kathy Pipis and Alice Carter discussed turnover rates for their landscape companies of approximately 25 percent. The committee also felt that prescriptive standards in (e)(4) already adequately call for refresher training including prior to operating a mower that the employee is unfamiliar with.

The committee considered a forklift training provision that requires an evaluation of the forklift operator every three years. Jim Green recommended including these ongoing evaluations for power lawn mower operators as a way to ensure that even the long-term employee is operating the equipment safely. However, it was discussed that the mowing equipment in commercial applications only has a life span of approximately 3 to 4 years and the proposal already triggers training for new equipment that an employee is unfamiliar with. Further, the majority including the Division felt that because of the moving and temporary/seasonal employment in the mowing industry that this provision be omitted. The committee then agreed to the language in proposed subsections (e)(5) and (6) related to avoidance of duplicative training and recordkeeping respectively.

Larry McCune asked about additional language added in the Scope section of the proposal, Section 3563(a). The Chair commented that additional language was added to clarify that a tractor would be covered by the provisions in Section 3563 only if it was designed primarily for mowing lawns and was manufactured in conformance with the ANSI B71.1 or .4 standards for power lawn mowers. The Chair also indicated a related informational "Note 2" was added to Section 3651 that pertains to ROPS for agricultural and industrial tractors. This completed the committee review of the proposed text.

The committee then provided Board staff with several ideas and contacts to assist staff in its evaluation of public and/or private sector costs that may be associated with this proposal.

There being no further comments or questions, the Chair noted that the draft proposal and minutes would be forthcoming. He thanked all attendees for their continued participation and assistance and then adjourned the meeting.